CLAIMS

We claim:

1. An apparatus, comprising:

a fuel cell; and

an oxygen supply, operably connected to the fuel cell, including an inorganic oxygen containing salt that decomposes into oxygen and a non-volatile salt.

2. An apparatus as claimed in claim 1, wherein the fuel cell comprises a solid oxide fuel cell.

3. An apparatus as claimed in claim 1, further comprising:

a heater in thermal communication with the inorganic oxygen containing salt.

4. An apparatus as claimed in claim 1, wherein the inorganic oxygen containing salt comprises a metal chlorate that decomposes into oxygen and a metal chloride.

5. An apparatus as claimed in claim 1, wherein the inorganic oxygen containing salt is stored within the oxygen supply in solid form.

6. An apparatus as claimed in claim 1, further comprising:

a fuel supply operably connected to the fuel cell.

7. An apparatus as claimed in claim 6, further comprising:

a housing defining an interior, in which the fuel cell, fuel supply and oxygen supply are located, and an exterior; and

first and second electrical contacts, operably connected to the fuel cell, associated with the exterior of the housing.

8. An apparatus as claimed in claim 6, further comprising:

a housing in which the fuel cell, fuel supply and oxygen supply are located; and

a waste products storage device, operably connected to the fuel cell, located within the housing.

9. A method, comprising the steps of:

decomposing an inorganic oxygen containing salt into oxygen and a non-volatile salt; and

supplying the oxygen to a fuel cell.

10. A method as claimed in claim 8, wherein the step of decomposing an inorganic oxygen containing salt comprises decomposing a metal chlorate into oxygen and a metal chloride.

11. A method as claimed in claim 8, further comprising the step of:

supplying heat to the inorganic oxygen containing salt.

12. A method as claimed in claim 8, further comprising the step of:

storing the inorganic oxygen containing salt in solid form.

13. A method as claimed in claim 8, further comprising the steps of:

supplying fuel to the fuel cell; and

transferring byproducts from a fuel cell reaction to a waste products storage device.

14. An apparatus, comprising:

a fuel cell; and

means, operably connected to the fuel cell, for decomposing an inorganic oxygen containing salt into oxygen and a non-volatile salt.

15. An apparatus as claimed in claim 14, wherein the fuel cell comprises a solid oxide fuel cell.

16. An apparatus as claimed in claim 14, further comprising:

a fuel supply operably connected to the fuel cell.

17. An apparatus as claimed in claim 16, further comprising:

a housing defining an interior, in which the fuel cell, fuel supply and means for decomposing an inorganic oxygen containing salt are located, and an exterior; and

first and second electrical contacts, operably connected to the fuel cell, associated with the exterior of the housing.

18. An apparatus as claimed in claim 16, further comprising:

a housing in which the fuel cell, fuel supply and means for decomposing an inorganic oxygen containing salt are located; and

a waste products storage device, operably connected to the fuel cell, located within the housing.

19. An apparatus, comprising:

a power consuming device; and

a fuel cell system, operably connected to the power consuming device, including

a fuel cell,

a fuel supply operable connected to the fuel cell, and

an oxygen supply, operably connected to the fuel cell, including an inorganic oxygen containing salt that decomposes into oxygen and a non-volatile salt.

20. An apparatus as claimed in claim 19, wherein the power consuming device includes at least one electrical contact, the fuel cell system includes at least one electrical contact, and the power consuming device and fuel cell system

are respectively configured such that the fuel cell electrical contact will mate with the power consuming device electrical contact when the fuel cell system is inserted into the electrical device.

21. An apparatus, comprising:

a fuel cell;

a waste products storage device, operably connected to the fuel cell, including an absorbent material that endothermically reacts with byproducts from the fuel cell.

22. An apparatus as claimed in claim 21, wherein the fuel cell comprises a solid oxide fuel cell.

23. An apparatus as claimed in claim 21, wherein the absorbent material comprises at least one of a metal and a metal oxide.

24. An apparatus as claimed in claim 21, further comprising:

a housing defining an interior, in which the fuel cell and waste products storage device are located, and an exterior; and

first and second electrical contacts, operably connected to the fuel cell, associated with the exterior of the housing.

25. An apparatus as claimed in claim 24, further comprising:

a fuel supply, operably connected to the fuel cell, located within the housing.

26. An apparatus as claimed in claim 24, further comprising:

an oxidant supply, operably connected to the fuel cell, located within the housing.

27. An apparatus as claimed in claim 26, wherein the oxidant supply includes an inorganic oxygen containing salt that decomposes into oxygen and a non-volatile salt.

28. An apparatus as claimed in claim 21, wherein the product of a reaction between the absorbent material and the fuel cell byproducts is stored within the waste products storage device.

29. A method of operating a fuel cell, comprising the steps of:

transferring fuel cell reaction byproducts to a waste products storage device; and

mixing the fuel cell reaction byproducts with an absorbent material that endothermically reacts with the fuel cell reaction byproducts .

30. A method as claimed in claim 29, further comprising the step of:

storing a product of a reaction between the absorbent material and the fuel cell reaction byproducts within the waste products storage device.

31. A method as claimed in claim 29, wherein the fuel cell is located within a housing, the method further comprising the step of:

storing a product of a reaction between the absorbent material and the fuel cell reaction byproducts within the waste products storage device within the housing.

32. An apparatus, comprising:

a fuel cell;

means, operably connected to the fuel cell, for receiving fuel cell reaction byproducts, using the fuel cell reaction byproducts in an endothermic reaction, and storing all products of the endothermic reaction.

33. An apparatus as claimed in claim 32, wherein the fuel cell comprises a solid oxide fuel cell.

34. An apparatus as claimed in claim 32, further comprising:

a housing defining an interior, in which the fuel cell and means for receiving fuel cell reaction byproducts are located, and an exterior; and

first and second electrical contacts, operably connected to the fuel cell, associated with the exterior of the housing.

35. An apparatus as claimed in claim 32, further comprising:

a fuel supply, operably connected to the fuel cell, located within the housing.

36. An apparatus as claimed in claim 32, further comprising:

an oxidant supply, operably connected to the fuel cell, located within the housing.

37. An apparatus as claimed in claim 36, wherein the oxidant supply includes an inorganic oxygen containing salt that decomposes into oxygen and a non-volatile salt.

38. An apparatus, comprising:

a power consuming device; and

a fuel cell system, operably connected to the power consuming device, including

a fuel cell,

a waste products storage device, operably connected to the fuel cell, including an absorbent material that endothermically reacts with byproducts from the fuel cell.

39. An apparatus as claimed in claim 38, wherein the power consuming device includes at least one electrical contact, the fuel cell system includes at least one electrical contact, and the power consuming device and fuel cell system are respectively configured such that the fuel cell electrical contact will mate with

the power consuming device electrical contact when the fuel cell system is inserted into the electrical device.

40. An apparatus as claimed in claim 38, wherein the fuel cell system includes a fuel supply and an oxidant supply.